

TYPE

**SUBMERSIBLE SEWAGE PUMPS**

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**VSSF**  
**VSSFQD**

**photo  
coming  
soon**

Flows to 800 gpm, Heads to 110',  
1 thru 40 hp. Discharge size 4", 1750 and  
1150 rpm, strainer in discharge pipe,  
optional quick disconnect fittings.

**HIGHLIGHTS**

- ⌘ Motors are Fully Submersible
- ⌘ Pumps are Non-Clog Type
- ⌘ Close-Coupled Design for Perfect Alignment
- ⌘ Strainer Basket to Trap Large Solids
- ⌘ QD Model for Easy Removal
- ⌘ For Sewage, Effluent, and Industrial Waste Water
- ⌘ Control Systems Available
- ⌘ Receiving Tanks Available

## FEATURES

Type VSSF pumps have cast iron casings with smooth waterway to insure maximum efficiency. Rabbeted construction insures complete alignment of the rotating element. The cast iron impeller is of non-clog design and is balanced prior to assembly.

**MOTOR FEATURES:** Motors are available for 1750 and 1150 rpm operation with both single phase and three phase windings. Single phase motors are furnished with a separate capacitor box. All motors have prelubricated ball bearings. Explosion proof motors are also available. They are rated for intermittent duty in air at full load, continuous duty in air at reduced load, and, if furnished with modified frames, for continuous duty in air at full load. Shaft and fasteners are stainless steel. End brackets and frame are cast iron. All leads are epoxy sealed. Double seals provide protection for the electrical parts. If the outer seal fails, the inner seal protects the motor while water enters the oilfilled chamber. Optional moisture sensing probe can detect the entry of water into the chamber and sends a signal to the appropriate alarm. Motors are furnished with 25 feet of power and control cable and grounding wire. The standard motors are rated for operation in 40 degrees C (104 F) water, but can be modified for higher ambient temperatures. Thermal protection is a standard feature.

**FED-FLUSH FITTINGS:** VSSF and VSSF-QD units are designed so that sewage entering the pit shall flow through stainless steel strainer baskets in the pump discharge pipes. Solids are retained in the baskets and the liquid continues through the pump casings into the pit. This prevents possible clogging of the pump casing and impeller by the solids. The solids are flushed into the discharge line during the pump discharge cycle and a control valve prevents backup into the house line. An overflow fitting allows liquid to flow directly into the pit during discharge cycles, if necessary.

**QUICK-DISCONNECT FITTINGS (optional):** VSSF pumps can be furnished with Quick-Disconnect fittings (VSSF-QD) if desired. These fittings permit lifting of the pumps from the pit for inspection or service, without anyone entering the sewage pit and without disturbing the pump discharge pipes and electrical connections. The pump is lowered into the pit, held in position by its guide rail and automatically completes the discharge connection. The angled discharge mating flange is designed to assure a complete discharge seal.

## MODIFICATIONS AVAILABLE

Pumps can be furnished with bronze impellers, stainless steel fasteners, longer cables and special seals. Accessory items include moisture-detection relays, motor controls, high water alarms, steel covers and grouting frames or hinged access doors for concrete pits and steel or fiberglass receiving basins.

## PUMP CONTROLS

The recommended control arrangement for VSSF and VSSF-QD pumps is the Submers-a-bulb control (see SBS Bulletin 263) which includes on-off mercury bulbs, high water alarm, temperature sensor cut-out, moisture sensor alarm and automatic alternator for duplex units. Float controls are also available.

## SUGGESTED SPECIFICATION FOR DUPLEX VSSF & VSSF-QD UNIT WITH TYPE SBS CONTROLLER FOR INSTALLATION IN CONCRETE PIT

Furnish and install, as shown on plans, a Federal Pump Corporation Type VSSF (VSSFQD if Quick-Disconnect fittings are required) duplex submersible Fed-Flush sewage pump unit. The pumps shall be of cast iron construction with non-clog, balanced impellers, and rated as shown in the pump schedule.

The unit shall be so designed that sewage entering the pit shall flow through a stainless steel strainer basket in each pump discharge pipe. Solids will be retained in the baskets and the liquid will continue through the pump casings into the pit. Solids will be flushed into the discharge line during the pump discharge cycle and a control valve ahead of each pump shall prevent backup into the house line. An overflow fitting shall allow liquid to flow directly into the pit during pump discharge cycles, if necessary.

Each motor shall be submersible, air filled, protected by double-sealed oil chamber, and shall have a stainless steel shaft, thermal sensors, moisture sensing probe in the seal chamber, and 25 ft. waterproof cable. Motors shall be rated as shown in the pump schedule.

Pump control shall be by a Type SBS Submers-a-bulb controller, including four mercury tube bulbs on a Style 1 suspension bracket. A NEMA-4 junction box shall be provided together with a control panel in a NEMA-1 wall mounting enclosure, including therein fusible disconnect switches, magnetic starters, HOA selector switches, automatic pump alternator, required relays and transformers, pump-run lights plus an alarm bell and silencer with lights to indicate high water and outer seal failure conditions.

For units to be furnished with quick-disconnect fittings (VSSF-QD), add the following specification paragraph: Each pump shall have Quick-Disconnect fittings including base plate, guide brackets, base elbow and lifting cable. Each pump shall be removable from the pit by riding up on the guide rail (4x4 wide flange beam) without disconnecting any piping or electrical connection, and without anyone entering the pit. Pumps shall be re-lowered to their operating position in the same manner.

For concrete pit and thru-cover pump discharge, add the following specification paragraph: Furnish a Style PF-1 angle iron pit frame and steel cover for the concrete wet pit. The pit cover shall be gas-tight with pump removal plates, flanged openings for pump discharge pipes, vent connection and control openings. The frame and cover shall have a corrosion-resistant coating and shall be fabricated for a pit size and top opening size as shown in the pump schedule.

For concrete pit and under-cover pump discharge, add the following specification paragraph: The pumps shall discharge through the side wall of the wet pit. Provision shall also be made in the side wall for venting and for control and power wires. Furnish a Federal Type Q access door for installation in the top slab of the concrete pit. Pit size and door size shall be as shown in the pump schedule.

The access door shall be single-leaf with steel frame, diamond steel leaf, steel hinges and torsion bars for easy opening. The door and frame shall have a corrosion-resistant coating.

Also furnish a concrete valve chamber of the size shown in the pump schedule, with steel-covered top access opening, to house the discharge check valves, gate valves and wye fitting.

### Pump Schedule:

Model Number:

\_\_\_\_\_ gpm per pump, \_\_\_\_\_ ft. tdh, \_\_\_\_\_ motor hp, \_\_\_\_\_ rpm  
 \_\_\_\_\_ phase, \_\_\_\_\_ cycles, \_\_\_\_\_ 60 volts

Pump Pit Size: \_\_\_\_\_ in. x \_\_\_\_\_ in. x \_\_\_\_\_ in. deep

Top Opening (or Access Door) Size: \_\_\_\_\_ in. x \_\_\_\_\_ in. x \_\_\_\_\_ in. deep

Valve Chamber Size (if any): \_\_\_\_\_ in. x \_\_\_\_\_ in. x \_\_\_\_\_ in. deep

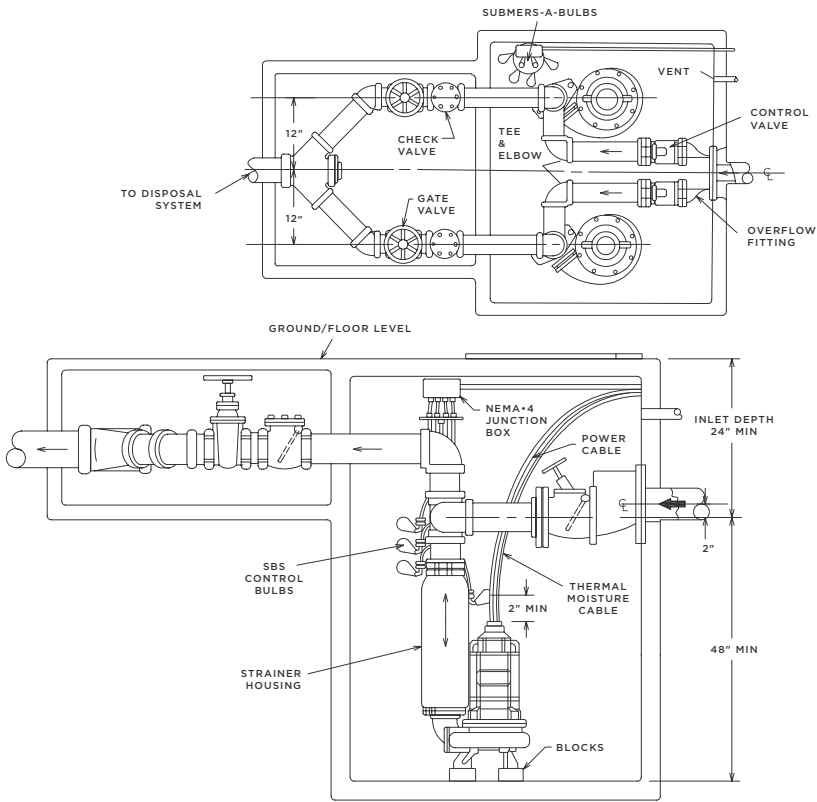
### Minimum Dimensions

Pump Model	Flush Fittings	Quick Disconnect Fittings	Simplex or Duplex	Min. Pump Removal Hole Size	Min. Hinged Door Size (Type Q,K,J)	Min. Square Pit Size	Min. Round Pit Dia.
VSSF-4A	YES	NO	SIMPLEX	-	-	36 X 48	48
VSSF-4A	YES	NO	DUPLEX	-	-	48 X 48	48
VSSF-4C & 4E	YES	NO	SIMPLEX	-	-	36 X 48	48
VSSF-4C & 4E	YES	NO	DUPLEX	-	-	48 X 48	48
VSSF-QD-4A	YES	YES	SIMPLEX	16 X 22	42 X 42	24 X 54	48
VSSF-QD-4A	YES	YES	DUPLEX	46 X 22	42 X 42	48 X 54	60
VSSF-QD-4C & 4E	YES	YES	SIMPLEX	20 X 26	30 X 54	24 X 54	54
VSSF-QD-4C & 4E	YES	YES	DUPLEX	50 X 26	30 X 54	48 X 54	66

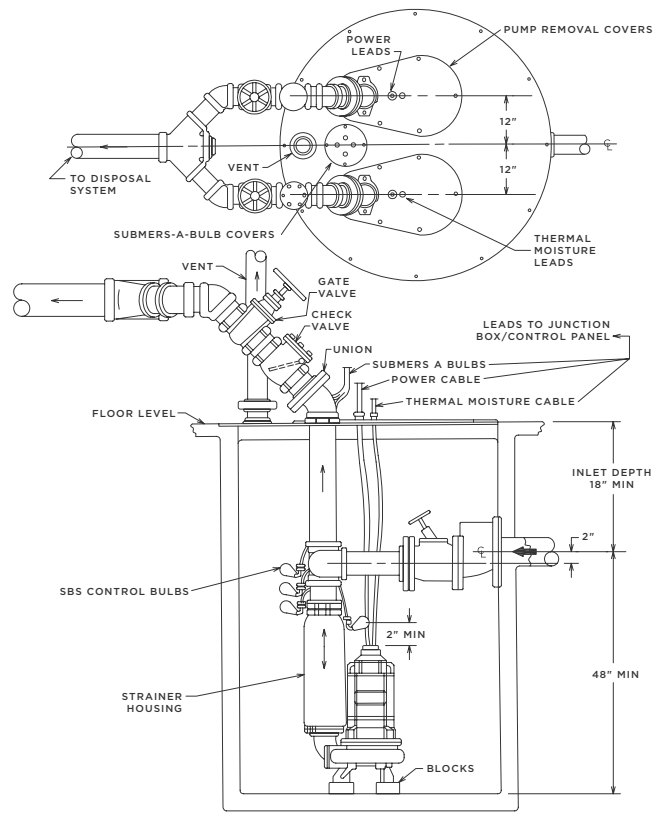
**Selection Table**

Unit Numbers with Fed-Flush Fittings	Unit Numbers with Fed-Flush & Quick Disconnect Fittings	GPM	Disch. Head (feet)	Motor HP	Disch. Size (inches)	Unit Numbers with Fed-Flush Fittings	Unit Numbers with Fed-Flush & Quick Disconnect Fittings	GPM	Disch. Head (feet)	Motor HP	Disch. Size (inches)
<b>1750 RPM</b>						<b>1150 RPM</b>					
VSSF-4A-1-4	VSSF-QD-4A-1-4	50	26	1	4	VSSF-4A-.75-6	VSSF-QD-4A-.75-6	50	23	0.75	4
VSSF-4A-1.5-4	VSSF-QD-4A-1.5-4		33	1.5		VSSF-4A-1-6	VSSF-QD-4A-1-6		28	1	
VSSF-4A-2-4	VSSF-QD-4A-2-4		42	2		VSSF-4A-1.5-6	VSSF-QD-4A-1.5-6		31	1.5	
VSSF-4A-3-4	VSSF-QD-4A-3-4		48	3		VSSF-4C-3-6	VSSF-QD-4C-3-6		36	3	
VSSF-4A-5-4	VSSF-QD-4A-5-4		58	5		VSSF-4E-5-6	VSSF-QD-4E-5-6		48	5	
VSSF-4A-1-4	VSSF-QD-4A-1-4	75	25	1	4	VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6	75	61	7.5	4
VSSF-4A-1.5-4	VSSF-QD-4A-1.5-4		32	1.5		VSSF-4A-.75-6	VSSF-QD-4A-.75-6		19	0.75	
VSSF-4A-2-4	VSSF-QD-4A-2-4		40	2		VSSF-4A-1-6	VSSF-QD-4A-1-6		23	1	
VSSF-4A-3-4	VSSF-QD-4A-3-4		45	3		VSSF-4A-1.5-6	VSSF-QD-4A-1.5-6		29	1.5	
VSSF-4A-5-4	VSSF-QD-4A-5-4		56	5		VSSF-4C-3-6	VSSF-QD-4C-3-6		35	3	
VSSF-4A-1-4	VSSF-QD-4A-1-4	100	21	1	4	VSSF-4E-5-6	VSSF-QD-4E-5-6	100	46	5	4
VSSF-4A-1.5-4	VSSF-QD-4A-1.5-4		30	1.5		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		59	7.5	
VSSF-4A-2-4	VSSF-QD-4A-2-4		35	2		VSSF-4A-.75-6	VSSF-QD-4A-.75-6		15	0.75	
VSSF-4A-3-4	VSSF-QD-4A-3-4		42	3		VSSF-4A-1-6	VSSF-QD-4A-1-6		20	1	
VSSF-4A-5-4	VSSF-QD-4A-5-4		55	5		VSSF-4A-1.5-6	VSSF-QD-4A-1.5-6		27	1.5	
VSSF-4A-1-4	VSSF-QD-4A-1-4	125	19	1	4	VSSF-4C-3-6	VSSF-QD-4C-3-6	125	33	3	4
VSSF-4A-1.5-4	VSSF-QD-4A-1.5-4		26	1.5		VSSF-4E-5-6	VSSF-QD-4E-5-6		44	5	
VSSF-4A-2-4	VSSF-QD-4A-2-4		33	2		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		58	7.5	
VSSF-4A-3-4	VSSF-QD-4A-3-4		38	3		VSSF-4A-1-6	VSSF-QD-4A-1-6		18	1	
VSSF-4A-5-4	VSSF-QD-4A-5-4		53	5		VSSF-4A-1.5-6	VSSF-QD-4A-1.5-6		25	1.5	
VSSF-4A-1-4	VSSF-QD-4A-1-4	150	16	1	4	VSSF-4C-3-6	VSSF-QD-4C-3-6	150	31	3	4
VSSF-4A-1.5-4	VSSF-QD-4A-1.5-4		23	1.5		VSSF-4E-5-6	VSSF-QD-4E-5-6		42	5	
VSSF-4A-2-4	VSSF-QD-4A-2-4		29	2		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		57	7.5	
VSSF-4A-3-4	VSSF-QD-4A-3-4		36	3		VSSF-4A-1-6	VSSF-QD-4A-1-6		13	1	
VSSF-4A-5-4	VSSF-QD-4A-5-4		52	5		VSSF-4A-1.5-6	VSSF-QD-4A-1.5-6		21	1.5	
VSSF-4C-7.5-4	VSSF-QD-4C-7.5-4		62	7.5							
VSSF-4A-1-4	VSSF-QD-4A-1-4	200	7	1	4	VSSF-4C-3-6	VSSF-QD-4C-3-6	200	30	3	4
VSSF-4A-1.5-4	VSSF-QD-4A-1.5-4		15	1.5		VSSF-4E-5-6	VSSF-QD-4E-5-6		40	5	
VSSF-4A-2-4	VSSF-QD-4A-2-4		25	2		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		56	7.5	
VSSF-4A-3-4	VSSF-QD-4A-3-4		32	3		VSSF-4A-1-6	VSSF-QD-4A-1-6		16	1.5	
VSSF-4A-5-4	VSSF-QD-4A-5-4		47	5		VSSF-4A-1.5-6	VSSF-QD-4A-1.5-6		22	2	
VSSF-4C-7.5-4	VSSF-QD-4C-7.5-4		60	7.5							
VSSF-4A-1.5-4	VSSF-QD-4A-1.5-4	250	8	1.5	4	VSSF-4C-3-6	VSSF-QD-4C-3-6	250	28	3	4
VSSF-4A-2-4	VSSF-QD-4A-2-4		16	2		VSSF-4C-5-6	VSSF-QD-4C-5-6		38	5	
VSSF-4A-3-4	VSSF-QD-4A-3-4		25	3		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		54	7.5	
VSSF-4A-5-4	VSSF-QD-4A-5-4		42	5		VSSF-4A-1-6	VSSF-QD-4A-1-6		14	1.5	
VSSF-4A-7.5-4	VSSF-QD-4A-7.5-4		50	7.5		VSSF-4A-1.5-6	VSSF-QD-4A-1.5-6		19	2	
VSSF-4C-10-4	VSSF-QD-4C-10-4		70	10							
VSSF-4C-15-4	VSSF-QD-4C-15-4		86	15							
VSSF-4A-2-4	VSSF-QD-4A-2-4	300	9	2	4	VSSF-4C-3-6	VSSF-QD-4C-3-6	300	26	3	4
VSSF-4A-3-4	VSSF-QD-4A-3-4		20	3		VSSF-4C-5-6	VSSF-QD-4C-5-6		35	5	
VSSF-4A-5-4	VSSF-QD-4A-5-4		35	5		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		50	7.5	
VSSF-4A-7.5-4	VSSF-QD-4A-7.5-4		49	7.5		VSSF-4E-10-6	VSSF-QD-4E-10-6		58	10	
VSSF-4C-10-4	VSSF-QD-4C-10-4		68	10		VSSF-4C-2-6	VSSF-QD-4C-2-6		15	2	
VSSF-4C-15-4	VSSF-QD-4C-15-4		83	15							
VSSF-4A-3-4	VSSF-QD-4A-3-4	350	16	3	4	VSSF-4C-3-6	VSSF-QD-4C-3-6	350	23	3	4
VSSF-4A-5-4	VSSF-QD-4A-5-4		30	5		VSSF-4C-5-6	VSSF-QD-4C-5-6		31	5	
VSSF-4C-7.5-4	VSSF-QD-4C-7.5-4		48	7.5		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		47	7.5	
VSSF-4C-10-4	VSSF-QD-4C-10-4		65	10		VSSF-4E-10-6	VSSF-QD-4E-10-6		54	10	
VSSF-4C-15-4	VSSF-QD-4C-15-4		85	15		VSSF-4E-15-6	VSSF-QD-4E-15-6		59	15	
VSSF-4C-3-4	VSSF-QD-4C-3-4	400	15	3	4	VSSF-4C-2-6	VSSF-QD-4C-2-6	400	13	2	4
VSSF-4C-5-4	VSSF-QD-4C-5-4		29	5		VSSF-4C-3-6	VSSF-QD-4C-3-6		21	3	
VSSF-4C-7.5-4	VSSF-QD-4C-7.5-4		45	7.5		VSSF-4C-5-6	VSSF-QD-4C-5-6		28	5	
VSSF-4C-10-4	VSSF-QD-4C-10-4		61	10		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		42	7.5	
VSSF-4C-15-4	VSSF-QD-4C-15-4		75	15		VSSF-4E-10-6	VSSF-QD-4E-10-6		50	10	
VSSF-4C-20-4	VSSF-QD-4C-20-4		82	20							
VSSF-4C-5-4	VSSF-QD-4C-5-4	500	23	5	4	VSSF-4C-5-6	VSSF-QD-4C-5-6	500	12	2	4
VSSF-4C-7.5-4	VSSF-QD-4C-7.5-4		38	7.5		VSSF-4C-2-6	VSSF-QD-4C-2-6		12	2	
VSSF-4C-10-4	VSSF-QD-4C-10-4		55	10		VSSF-4C-3-6	VSSF-QD-4C-3-6		20	3	
VSSF-4C-15-4	VSSF-QD-4C-15-4		70	15		VSSF-4C-5-6	VSSF-QD-4C-5-6		24	5	
VSSF-4C-20-4	VSSF-QD-4C-20-4		77	20		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		38	7.5	
VSSF-4E-25-4	VSSF-QD-4E-25-4		88	25							
VSSF-4E-30-4	VSSF-QD-4E-30-4		102	30							
VSSF-4E-40-4	VSSF-QD-4E-40-4		120	40							
VSSF-4C-5-4	VSSF-QD-4C-5-4	600	17	5	4	VSSF-4E-10-6	VSSF-QD-4E-10-6	600	44	10	4
VSSF-4C-7.5-4	VSSF-QD-4C-7.5-4		30	7.5		VSSF-4E-15-6	VSSF-QD-4E-15-6		57	15	
VSSF-4C-10-4	VSSF-QD-4C-10-4		50	10		VSSF-4C-2-6	VSSF-QD-4C-2-6		12	2	
VSSF-4C-15-4	VSSF-QD-4C-15-4		64	15		VSSF-4C-3-6	VSSF-QD-4C-3-6		20	3	
VSSF-4C-20-4	VSSF-QD-4C-20-4		72	20		VSSF-4C-5-6	VSSF-QD-4C-5-6		23	5	
VSSF-4E-25-4	VSSF-QD-4E-25-4		82	25							
VSSF-4E-30-4	VSSF-QD-4E-30-4		100	30							
VSSF-4E-40-4	VSSF-QD-4E-40-4		115	40							
VSSF-4E-15-4	VSSF-QD-4E-15-4	800	43	15	4	VSSF-4E-15-6	VSSF-QD-4E-15-6	800	54	15	4
VSSF-4E-20-4	VSSF-QD-4E-20-4		60	20		VSSF-4E-5-6	VSSF-QD-4E-5-6		16	5	
VSSF-4E-25-4	VSSF-QD-4E-25-4		68	25		VSSF-4E-7.5-6	VSSF-QD-4E-7.5-6		29	7.5	
VSSF-4E-30-4	VSSF-QD-4E-30-4		88	30		VSSF-4E-10-6	VSSF-QD-4E-10-6		40	10	
VSSF-4E-40-4	VSSF-QD-4E-40-4		110	40		VSSF-4E-15-6	VSSF-QD-4E-15-6		50	15	

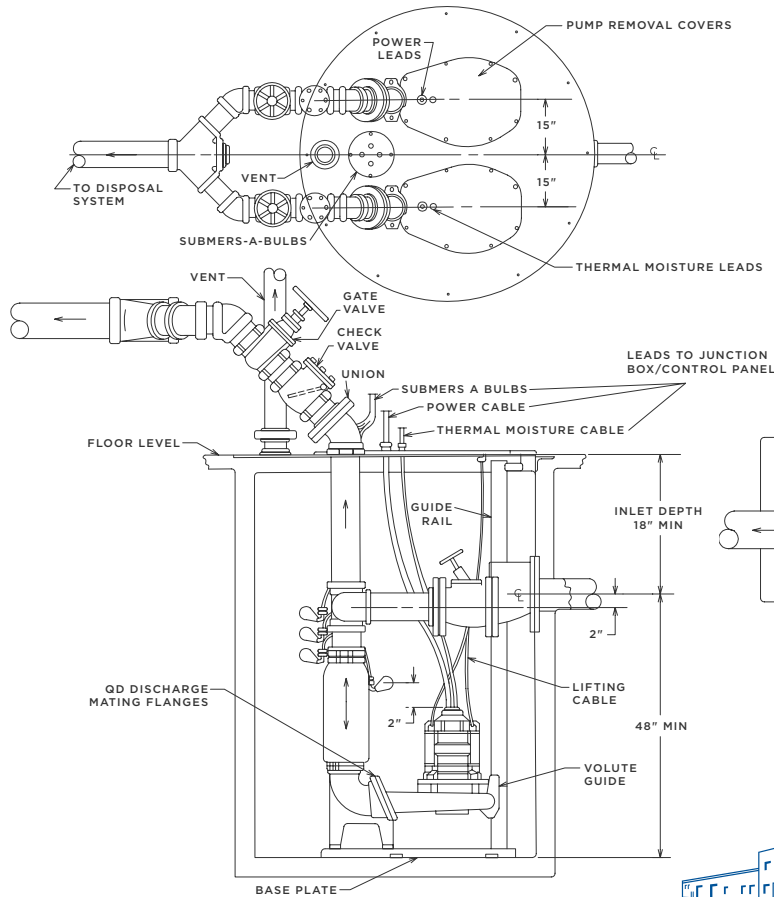
**Typical installation of VSSF with under cover discharge**



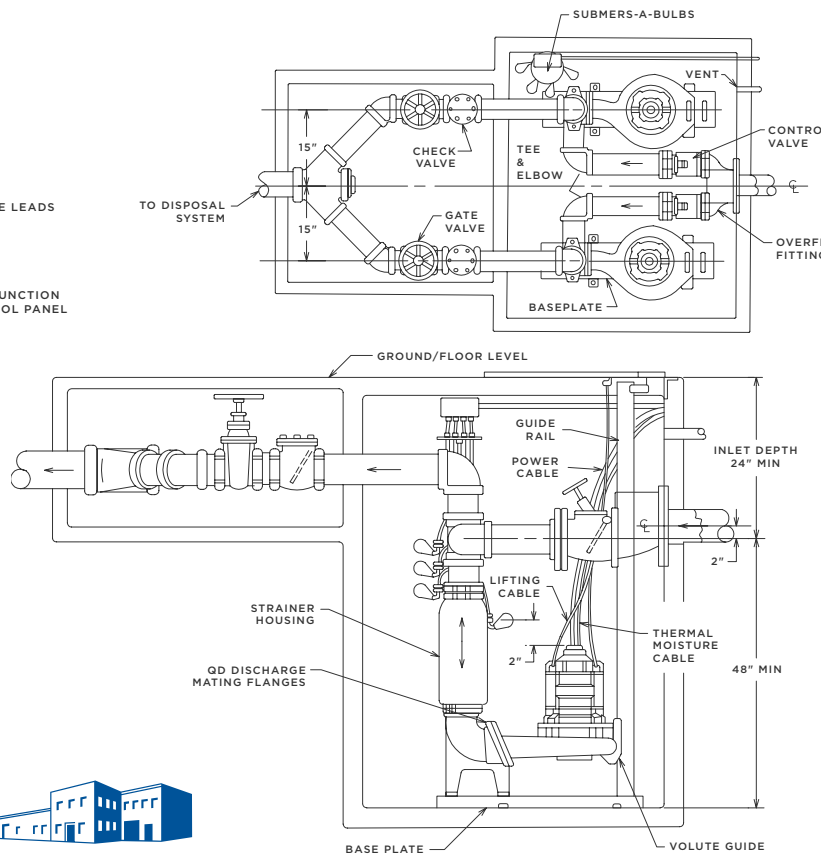
**Typical installation of VSSF with THRU cover discharge**



**Typical installation of VSSF-QD with thru cover discharge**



**Typical installation of VSSF-QD with under cover discharge**



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